

10/588782
IAP11 Rec'd PCT/PTO 08 AUG 2006

PTO/SB/08a (07-05)

Approved for use through 07/31/2006. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(Use as many sheets as necessary)</i>				Complete if Known	
		Application Number	New U.S. Nat'l. Phase of PCT/KR2004/002181		
		Filing Date	August 8, 2006		
		First Named Inventor	Lee et al.		
		Art Unit	Not yet assigned		
		Examiner Name	Not yet assigned		
		Attorney Docket Number	4240-148		
Sheet	1	of	3		

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number - Kind Code ² (if known)			
	AA	US- 2005/0019857 - - A1	07-27-2005	Lee, Sang-Yup, et al.	
	AB	US- 6,274,345 - - B1	08-14-2001	Lee, Sang Yeop, et al.	
	AC	US- 5,114,674 - - A	05-19-1992	Stanbro, William D., et al.	
	AD	US- 5,807,754 - - A	09-15-1998	Zambias, Robert, et al.	
		US-			

FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No. ¹	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
		Country Code ³ - Number ⁴ - Kind Code ⁵ (if known)				
	AE	WO - -00/61806-- A2	10-19-2000	Baer, Thomas M., et al.		
	AF	WO - -97/42507-- A1	11-13-1997	Esnouf, Michael Peter, et		
	AG	KR - -10-2004-0462832-- B1	12-10-2004	Lee, Sang Yeop, et al.		
	AH	EP - -0 818 467-- A2	01-14-1998	Miwa, Johji, et al.		
	AI	WO - -00/54046-- A2	09-14-2000	Noonan, William D., et al.		

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	AJ	AGTERBERG, MARJA, ET AL., Outer-membrane PhoE protein of Escherichia coli K-12 as an exposure vector: possibilities and limitations, Gene, March 1990, Page(s) 37-45, Volume 88, Number 1	
	AK	CADWELL, R.C., ET AL., Randomization of genes by PCR mutagenesis., PCR Methods Appl., August 1992, Page(s) 28-33, Volume 2, Number 1	
	AL	CHARBIT, ALAIN, ET AL., Versatility of a vector for expressing foreign polypeptides at the surface of Gram-negative bacteria, Gene, October 15, 1988, Page(s) 181-189, Volume 70, Number 1	

Examiner Signature	Date Considered	
--------------------	-----------------	--

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹Applicant's unique citation designation number (optional). ²See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Substitute for form 1449B/PTO <h2 style="text-align: center;">INFORMATION DISCLOSURE STATEMENT BY APPLICANT</h2> <p style="text-align: center;">(Use as many sheets as necessary)</p>				Complete if Known	
				Application Number	New U.S. Nat'l. Phase of PCT/KR2004/002181
				Filing Date	August 8, 2006
				First Named Inventor	Lee et al.
				Art Unit	Not yet assigned
				Examiner Name	Not yet assigned
				Attorney Docket Number	4240-148
Sheet	2	of	3		

NON PATENT LITERATURE DOCUMENTS				
Examiner Initials*	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.		T ²
	AM	CRISTALLI, GAETANO, ET AL., The Amino-Terminal Region of the Long-Chain Fatty Acid Transport Protein FadL Contains an Externally Exposed Domain..., Arch. Biochem. Biophys., May 15, 2000, Page(s) 324-333, Volume 377, Number 2		
	AN	FRANCISCO, JOSEPH A., ET AL., Production and Fluorescence-Activated Cell Sorting of Escherichia coli Expressing a Functional Antibody Fragment..., November 1993, Page(s) 10444-10448, Volume 90, Number 22		
	AO	GEORGIOU, GEORGE, ET AL., Practical applications of engineering Gram-negative bacterial cell surfaces, TIBTECH, January 1993, Page(s) 6-10, Volume 11, Number 1		
	AP	GEORGIOU, GEORGE, ET AL., Display of heterologous proteins on the surface of microorganisms: From the screening of combinatorial libraries to..., Nat. Biotechnol., January 1997, Page(s) 29-34, Volume 15, Number 1		
	AQ	KJÆRGAARD, KRISTIAN, ET AL., Sequestration of Zinc Oxide by Fimbrial Designer Chelators, Appl. Environ. Microbiol., January 2000, Page(s) 10-14, Volume 66, Number 1		
	AR	KUMAR, G.B., ET AL., Bacterial long-chain fatty acid transport. Identification of amino acid residues within the outer membrane protein FadL, J. Biol. Chem., July 25, 1993, Page(s) 15469-15476, Volume 268, Number 21		
	AS	LÄNG, HANNU, ET AL., Characterization of adhesive epitopes with the OmpS display system, Eur. J. Biochem., January 2000, Page(s) 163, Volume 267, Number 1		
	AT	LEE, JONG-SOO, ET AL., Surface-displayed viral antigens on Salmonella carrier vaccine, Nature Biotechnology, June 2000, Page(s) 645-648, Volume 18, Number 6		
	AU	LEE, SANG YUP, ET AL., Microbial cell-surface display, TIBTECH, January 2003, Page(s) 45-52, Volume 21, Number 1		
	AV	LUTZ, STEFAN, ET AL., Homology-independent protein engineering, Curr. Opin. Biotechnol., August 1, 2000, Page(s) 319-324, Volume 11, Number 4		

Examiner Signature	Date Considered
--------------------	-----------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.
 †Applicant's unique citation designation number (optional). ‡Applicant is to place a check mark here if English language Translation is attached.
 This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

10/588782

IAP11 Rec'd PCT/PTO 08 AUG 2006

PTO/SB/08b (07-05)

Approved for use through 06/30/2006. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Substitute for form 1449B/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(Use as many sheets as necessary)</i>			Complete if Known		
			Application Number	New U.S. Nat'l. Phase of PCT/KR2004/002181	
			Filing Date	August 8, 2006	
			First Named Inventor	Lee et al.	
			Art Unit	Not yet assigned	
			Examiner Name	Not yet assigned	
Sheet	3	of	3	Attorney Docket Number	4240-148

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	AW	MARTINEAU, P., ET AL., A Genetic System to Elicit and Monitor Anti-Peptide Antibodies Without Peptide Synthesis, Bio/Technology, February 1991, Page(s) 170-172, Volume 9, Number 2	
	AX	NESS, JON E., ET AL., DNA shuffling of subgenomic sequences of subtilisin, Nat. Biotechnol., September 1999, Page(s) 893-896, Volume 17, Number 9	
	AY	RICHINS, RICHARD D., ET AL., Biodegradation of organophosphorus pesticides by surface-expressed organophosphorus hydrolase, Nat. Biotechnol., October 1997, Page(s) 984-987, Volume 15, Number 10	
	AZ	SAMUELSON, PATRIK, ET AL., Display of proteins on bacteria, J. Biotechnol., June 26, 2002, Page(s) 129-154, Volume 96, Number 2	
	BA	SHAO, Z., ET AL., Random-priming in vitro recombination: an effective tool for directed evolution, Nucleic Acids Res., January 1998, Page(s) 681-683, Volume 26, Number 2	
	BB	SOUSA, CAROLINA, ET AL., Metalloidsorption by Escherichia coli Cells Displaying Yeast and Mammalian Metallothioneins Anchored to the Outer Membrane, J. Bacteriol., May 1998, Page(s) 2280-2284, Volume 180, Number 9	
	BC	STÄHL, STEFAN, ET AL., Bacterial surface display: trends and progress, TIBTECH, May 1997, Page(s) 185-192, Volume 15, Number 5	
	BD	STEMMER, WILLEM P.C., Rapid evolution of a protein in vitro by DNA shuffling, Nature, August 4, 1994, Page(s) 389-391, Volume 370, Number 6488	
	BE	ZHAO, HUIMIN, ET AL., Molecular evolution by staggered extension process (StEP) in vitro recombination, Nat. Biotechnol., March 1998, Page(s) 258-261, Volume 16, Number 3	

Examiner Signature		Date Considered	
---------------------------	--	------------------------	--

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹Applicant's unique citation designation number (optional). ²Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.